

## ABSTRACT OF THE DISCLOSURE

A radio-frequency (RF) apparatus capable of transmitting RF signals includes transmitter path circuitry. The transmitter path circuitry includes a voltage-controlled oscillator (VCO) that generates an output signal. The frequency of the output signal of the VCO circuitry is adjustable in response to a first control signal and a second control signal. The transmitter path circuitry also includes a first feedback circuitry and a second feedback circuitry that are responsive to the output signal of the VCO circuitry. The first feedback circuitry provides the first control signal to the VCO circuitry. The first control signal coarsely adjusts the frequency of the output signal of the VCO circuitry to a desired frequency. The second feedback circuitry supplies the second control signal to the VCO circuitry. The second control signal fine tunes the frequency of the output signal of the voltage-controlled oscillator circuitry to the desired frequency.